Practice and Innovation of Hybrid Teaching Based on Wechat "Rain Class"

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Abstract: The new education model of "Rain Class" launched by "Xuetang Online" in Tsinghua University has realized the perfect integration of PowerPoint and WeChat. Based on the teaching platform of "Rain Class", this paper constructs a hybrid teaching mode based on "Rain Class". Taking the course "Medical Computer Application" as an example, the implementation path of effective teaching is carried out for each link of the three-stage guidance of "preparation before class, teaching in class and review after class". It realizes the functions of teachers pushing teaching contents, answering questions in real time, interacting with students on multiple screens, etc. It endows every link of "students before class-teachers in class-students after class" with a brand-new experience and expands the application of this course in the teaching field. Through the practice of "Rain Classroom" platform in the teaching reform of the curriculum, hybrid teaching can not only broaden students' knowledge and improve students' autonomous learning ability, but also promote the equality between teachers and students, realize real-time dynamic evaluation, and bring new development opportunities for education.

1. Introduction

In 2018, China's Ministry of Education promulgated the "Education Informatization 2.0 Action Plan", pointing out that education informatization is the support to lead the development of education modernization and promote the renewal of education concepts, model reform and system reconstruction. In 2019, the CPC Central Committee and the State Council issued "Modernization of China's Education 2035", pointing out that modern educational technology should be used to accelerate the reform of personnel training mode and realize the organic combination of large-scale education and personalized training. The release of these two documents both emphasized the importance and urgency of the reform of teaching mode under the current education system in our country.

In recent years, with the new mobile technology revolution and the widespread popularity of smart phones, especially the rapid development and update of new social media, contemporary college students are more inclined to use Mobile Instant Messaging (MIM) applications such as microblog and WeChat to realize highly time-efficient, accurate and diversified information exchange. In particular, MIM applications have the properties and special functions that can be used anytime and anywhere, and have great potential in creating an effective environment to support teaching and learning. Mobile learning mode will definitely become a feasible learning mode for "Digital Generation" college students.

In 2016, "Xuetang Online" in Tsinghua University launched a new hybrid education model of "Rain Class". WeChat exists as a plug-in in PowerPoint, realizing the perfect integration of PowerPoint and WeChat. Through WeChat service number, functions such as code scanning and sign-in, real-time answer, answering questions, data analysis, etc. are realized. "Rain Class" can realize the functions of teachers pushing teaching contents, answering questions in real time and interacting with students on multiple screens. Every link of students before class-teachers class-students after class can be given a brand-new experience, so that teaching can return to its origin and classroom interaction can never be offline.

There are many deficiencies behind the current "massive open online course fever". First,

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MOOC's teaching method is relatively single, mainly adopts one-way communication teaching method, and lacks innovation in teaching method. Second, MOOC tends to make learners feel lonely. Most MOOC learners have a low degree of participation in non-contact environment and feel real. They lack “social existence” and are prone to loneliness and boredom in learning. Third, MOOC learners have a high dropout rate. Therefore, how to effectively realize the deep integration of curriculum teaching and the advantages of modern educational technology, and how to carry out teaching work in institutions of higher learning to realize the optimization of learning effect are issues worthy of our discussion.

2. Hybrid Teaching Practice Based on Wechat “Rain Class”

This paper is based on the course of “Medical Computer Application” and carries out practical research on 139 undergraduate students of 2019 grade in psychiatry, forensic medicine, pediatrics and medical examination of Gannan Medical College. In the process of mixed teaching practice, it is implemented according to the analysis of pre-class learning situation, the design of teaching activities and teaching evaluation. The implementation goal is to introduce high-quality MOOC resources and create a relaxed and pleasant learning environment by using the “Rain Classroom” teaching platform.

2.1 Learning Situation Analysis

“Medical Computer Application” is a public basic computer course for all freshmen. It is taught in the first semester of freshman year. In order to effectively carry out mixed teaching, I investigated the learning situation of 139 freshmen in this class through questionnaires. A total of 139 questionnaires were distributed, 139 were recovered (no students were absent in the first class), 0 were invalid, and the recovery rate was 100%. The questionnaire focuses on the following aspects: ((1) Interest in online learning; (2) traditional classroom teaching attitude, (3) attitude towards rain class +MOOC. Through the statistical analysis of the questionnaire, the overall situation of the students in this class is as follows:

(1) Interest in online learning: students seldom take the initiative to learn online courses. Most students know MOOC. However, due to the large amount of information on the network, they do not know how to select good courses and seldom participate in discussions and exchanges on the Internet. Because of the lack of guidance from teachers, learning motivation is insufficient and it is difficult to persist in learning.

(2) Traditional classroom teaching attitude: more than 75% of the students think that the traditional classroom teachers have less interaction and contact with students, and can only pay attention to individual students with outstanding performance, which is easy to cause the teaching to deviate from the actual situation of students. In addition, the teaching content and teaching method are relatively single, which cannot arouse interest in learning and hard listening can not concentrate in class.

(3) Attitudes towards Rain Class +MOOC: The vast majority of students are unfamiliar with Rain Class +MOOC, even when they first heard of it, but they all expressed their willingness to accept this mixed teaching method. At the same time, they have high expectations for “Rain Class +MOOC” learning, and think that this learning method is superior to traditional classroom teaching. Most students expect to increase the chances of online learning, participate in classroom discussions, and stimulate teacher-student interaction.

Therefore, this paper proposes a hybrid flip classroom teaching mode supported by “Rain Classroom” and perfects the curriculum resources. While perfecting and improving the current public computer teaching, it is also hoped that this mode can be applied to other public teaching.

2.2 Teaching Activity Design

Based on WeChat “Rain Class” as an intelligent teaching platform, this paper designs a hybrid teaching mode based on “Rain Class”. The teaching design is carried out before, during and after class, and the classroom can be reversed.

Before class, students should use the Rain Class for autonomous learning. Before class, the teacher will prepare the PPT materials before class and push them to the students' mobile phones through the Rain Class. The students can choose the appropriate time and place for preparation according to their actual situation. Teachers can put basic knowledge points and preview test questions into the pushed PPT, and complex knowledge points can be taught in class. In the preview PPT pushed before class, relevant MOOC resource videos can also be inserted appropriately, or teachers' own voice explanations can be inserted at the key and difficult points of knowledge, which can help students digest and understand the learning content in advance. If students encounter problems that they do not understand, they can use the function of "reporting to teachers" in the Rain Class to ask questions to the teachers so that the teachers can solve their doubts in time. In this way, students' autonomy and enthusiasm in learning have been fully mobilized. In addition, teachers can summarize common problems and explain them in face-to-face teaching according to the students' answers to preview courseware and related learning test questions.

In the class, the teacher uses the "Rain Class" to teach. Students scan two-dimensional codes or enter classroom codes to sign in and enter "Rain Class". Classroom teaching can take many forms. Teachers can sort out and explain common problems that occur in preview before class, and answer questions and solve doubts. It can also be a detailed explanation of complex knowledge content. If students do not understand something, they can feedback it to the teacher through the "Don't Know" button or use the function of the bullet screen to ask questions. The teacher can timely understand the current knowledge content of the students and adjust the teaching progress according to the feedback of the students. It can also be group discussion, collaborative inquiry, etc. Teachers set learning tasks, report or demonstrate operations in groups. It can also open the popup function, allowing the whole class to participate in the discussion, so as to improve students' participation and enthusiasm in learning. At the end of each group report, students from other groups can comment on and ask questions. Teachers can comment on and point out problems at the end and give points or deduction for group performance.

After class, the students consolidate. Teachers can further push the consolidation exercises after class in a focused and targeted way according to the students' learning situation in class. If students have any questions, they can communicate with the teachers through the "report teacher". Students can make a further evaluation of their learning situation in the consolidation phase after class. Teachers should reflect on the teaching according to the teaching situation in class and the answers to exercises after class so as to better carry out the teaching of the next class.

2.3 Teaching Assessment and Evaluation

The course of "Medical Computer Application" has a total of 42 learning hours (including 18 learning hours for theory and 24 learning hours for computer operation), and has been taught in a long-term way of "traditional classroom teaching+experimental computer operation". The theoretical course is mainly based on teachers' teaching and demonstration of basic theories, while the computer course is mainly based on practical teaching. Each lesson will be assigned with experimental tasks. Students can learn and consolidate knowledge through practical operation. According to the teaching plan, this course is an examination course, which adopts the assessment method of usual score *10%+ experimental score *30%+ final score *60%. Ordinary grades include attendance and classroom performance, while experimental grades include experimental completion, experimental attitude and experimental tests. This form of assessment results in a single form of process evaluation. Most students copy other students' homework in order to complete the task and get credit. Process evaluation has no practical effect on the final evaluation of students.

However, after adopting the mixed teaching mode, the final assessment of this course will no longer use the usual results *10%+ experimental results *30%+ final results *60% as the final assessment results, but will pass the online *40%+ offline assessment results *60% as the final assessment. Online assessment mainly includes students' preview of "Rain Class", test of answering questions and MOOC learning, "Rain Class" does not know how to ask questions and communicate online, and students' discussion and speech in class, etc. It is incorporated into the process

assessment, and the online chapter content test (30 minutes) is organized. The offline assessment mainly passes the final final examination at the end of the semester. In addition, through this “Rain Class +MOOC” teaching method, the enthusiasm of students to obtain massive open online course Certificate through massive open online course study certification has been stimulated.

After class, I asked the students to evaluate the class through interviews and questionnaires of course quality analysis. Through statistical analysis of questionnaires, the teaching efficiency of “Rain Class +MOOC” has been greatly improved, and the learning atmosphere of class students has also been greatly improved, with the attendance rate reaching more than 95%. In the process of group discussion, the team cooperation ability is particularly important. The wishes expressed by the teams can be fully released. Students can quickly enter the state of study and their thinking and expression ability can be improved.

3. Experience Innovation and Thinking

The hybrid teaching of “Rain Class +MOOC” is essentially a deep integration of traditional courses and online courses, self-paced and interactive cooperation, content customization and interactive discussion, etc. Through bold teaching practice, the following experiences and innovations have been obtained: (1) Teachers should face the challenges under the new situation, fundamentally change the role of simple knowledge imparters, and develop students' thinking in a more knowledge-guided way. (2) We should reform the evaluation method, effectively incorporate process evaluation, and guide students to invest more in learning and produce higher learning output. (3) Teachers should improve their information processing ability, introduce online high-quality resources, explore localization research, and achieve better “integration”. (4) Teachers should attach importance to stimulating students' internal learning motivation, cultivating and improving students' digital learning ability, and enabling students to carry out autonomous learning.

4. Conclusion

Any innovation is a bold attempt. As an educator, one should have the courage to try educational reform and innovation and make full use of information technology to innovate teaching methods. To speed up the promotion of the in-depth integration of information technology and education and teaching, to improve students' innovation ability and sustainable development ability, to mobilize students' learning autonomy, and to improve the effectiveness of the classroom.

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2017 Jiangxi education planning subject, 17YB178, “Internet plus” era, based on MOOC's integrated teaching practice and innovation research.

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